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09/768,976	01/23/2001	Richard E. Martin	Q01-1001-US1	2315

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EXAMINER

BLOUIN, MARK S

ART UNIT	PAPER NUMBER
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2653

DATE MAILED: 05/06/2003

11

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/768,976

Applicant(s)

MARTIN ET AL.

Examiner

Mark Blouin

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 January 2003.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-40 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-40 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other:

Detailed Action

Response to Amendment

- The reply filed 24 January 2003 was applied to the following effect: All relevant rejections are maintained by the Examiner.

Claim Objections

1. Claim 22 and 34 are objected to under 37 CFR 1.75 as being a substantial duplicate of claims 21 and 33, respectively. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper to object to the other as being a substantial duplicate of the other claim. See MPEP § 706.03(k).

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-3,5, 8-10,12-18 and 20-40 are rejected under 35 U.S.C. 102(b) as being anticipated by Arya et al. (USPN 5,739,982).
4. Regarding Claims 1-3,5, 8-10, 12,13,20,30, and 31, Arya et al. shows (Fig. 1) a disk drive (130) with a transducer assembly (Col. 2, ln. 67, Col. 3, lns. 1-2) comprising a storage disk (134), an actuator arm (146) that moves relative to the storage disk (134), a load beam (Fig. 4, (58)) secured to the actuator arm (146), a slider (48) including a data transducer that exchanges information with the storage disk during data transfer operations (Col. 2, ln. 67, Col. 3, lns. 1-2),

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and a head suspension (50) that secures the slider (46) to the load beam (Fig. 4, (58)) and positions the slider (46) near the storage disk (134), the head suspension (50) maintaining the slider at a pitch static attitude of less than zero degrees, between zero and approximately negative two degrees, less than approximately negative one degree, and less than approximately negative two degrees during data transfer operations, wherein stiction between the slider a storage disk is substantially less than if the pitch static attitude was greater than zero degrees during data transfer operations (Col. 7, Table 1), and the pads contact the storage disk when stiction occurs.

5. Regarding Claims 14-18, the disc drive set forth above will have necessarily been made using all the claimed method steps.

6. Regarding Claims 21 and 32, Arya et al. shows (Table 1) the disk drive, wherein the pitch static attitude is between zero and negative two degrees.

7. Regarding Claims 22 and 33, Arya et al. shows (Table 1) the disk drive, wherein the pitch static attitude is between negative one-half degree and negative two degrees.

8. Regarding Claims 24 and 35, Arya et al. shows (Table 1) the disk drive, wherein the stiction is at least 50% less than if the pitch static attitude was zero degrees during the data transfer operations. The data in Table 1 of Arya et al encompasses the specified operating ranges and, therefore, would yield similar stiction values.

9. Regarding Claims 25 and 36, Arya et al. shows (Table 1) the disk drive, wherein the stiction is at least 66% less than if the pitch static attitude was zero degrees during the data transfer operations. The data in Table 1 of Arya et al encompasses the specified operating ranges and, therefore, would yield similar stiction values.

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10. Regarding Claims 26 and 37, Arya et al. shows (Table 1) the disk drive, wherein the stiction is at least 75% less than if the pitch static attitude was zero degrees during the data transfer operations. The data in Table 1 of Arya et al encompasses the specified operating ranges and, therefore, would yield similar stiction values.

11. Regarding Claims 27 and 38, Arya et al. shows (Table 1) the disk drive, wherein the stiction is at least 2 grams less than if the pitch static attitude was zero degrees during the data transfer operations. The data in Table 1 of Arya et al encompasses the specified operating ranges and, therefore, would yield similar stiction values.

12. Regarding Claims 28 and 39, Arya et al. shows (Table 1) the disk drive, wherein the stiction is at least 3 grams less than if the pitch static attitude was zero degrees during the data transfer operations. The data in Table 1 of Arya et al encompasses the specified operating ranges and, therefore, would yield similar stiction values.

13. Regarding Claims 29 and 40, Arya et al. shows (Table 1) the disk drive, wherein the stiction is at least 4 grams less than if the pitch static attitude was zero degrees during the data transfer operations. The data in Table 1 of Arya et al encompasses the specified operating ranges and, therefore, would yield similar stiction values.

Claim Rejections - 35 USC § 103

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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15. Claims 4 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arya et al. (USPN 5,739,982).

16. Regarding Claims 4 and 11, Arya et al. shows all the features described, *supra*, except a head suspension maintaining the slider at a pitch static attitude of approximately negative two degrees. The pitch static attitude is a result effective variable and the Examiner finds that it would have been obvious to one of ordinary skill in the art to obtain the claimed pitch attitude through routine experimentation and optimization in the absence of criticality. Determining the optimal values of result effective variables would have been obvious and ordinarily within the skill of the art. *In re Boesch*, 617 F.2d 272, 276, 205, USPQ 215, 219 (CCPA 1980).

17. Claims 6 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arya et al. (USPN 5,739,982) in view of Jacques (USPN 5,612,839).

18. Regarding Claim 6, Arya et al. shows all the features described, *supra*, except a padded slider that includes an air bearing surface and at least one pad that extends below the air bearing surface and contacts the storage disk when stiction occurs. Jacques shows a padded slider (Fig. 4a) that includes an air bearing surface (channel between pads (101) and (103)) and at least one pad (101, 103) that extends below the air bearing surface. It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the disk drive of Arya et al. with a padded slider that includes an air bearing surface and at least one pad that extends below the air bearing surface as taught by Jacques. The rationale is as follows: One of ordinary skill in the art at the time the invention was made would have been motivated to provide the disk drive of Arya et al. with a padded slider that includes an air bearing surface and at least one pad that extends below the air bearing surface as taught by Jacques in order to house a magnetic

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head for recording and playback of a data storage medium and as a means to reduce friction on and damage to the storage medium.

19. Regarding Claim 19, the padded slider that includes an air bearing surface and at least one pad that extends below the air bearing surface and contacts the storage disk when stiction occurs set forth above will have necessarily been made using the claimed method step.

20. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Arya et al. (USPN 5,739,982) in view of Battu et al. (USPN 5,841,610).

21. Regarding Claim 7, Arya et al. shows all the features described, *supra*, except a ramp positioned near an outer diameter of the storage disk. Battu et al. shows a ramp (Fig. 1, (80) positioned near an outer diameter of the storage disk. It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the disk drive of Arya et al. with a ramp positioned near an outer diameter of the storage disk as taught by Battu et al. The rationale is as follows: One of ordinary skill in the art at the time the invention was made would have been motivated to provide the disk drive of Arya et al. with a ramp positioned near an outer diameter of the storage disk as taught by Battu et al. in order to create a landing area for the head gimbal array (HGA) rather than allowing the (HGA) to rest on the storage medium as in most known smaller disc drives, thus avoiding damage to the (HGA) and storage medium.

Response to Arguments

22. Applicant's arguments filed 24 January 2003 have been fully considered but they are not persuasive.

- Applicant asserts on page 14:

“ the head suspension maintaining the slider pitch at a pitch static attitude of less than zero degrees during the data transfer operations, wherein stiction between the slider and storage disk is substantially less than if the pitch static attitude was greater than zero degrees during the data transfer operations.”

The Examiner maintains that Arya et al shows, in Table 1, a range of pitch static attitudes that encompass the range of the pitch static attitudes in the Applicant's invention, and, therefore would yield similar results related to stiction between the slider and storage disk during the data transfer operations, i.e., stiction between the slider and the storage disk will be substantially less than if the pitch static attitude was greater than zero degrees.

Therefore, the rejection of claims 1-40 are upheld.

Conclusion

23. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

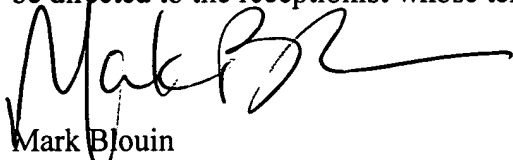
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however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

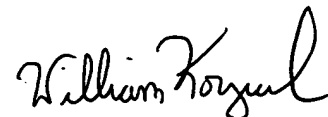
24. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mark Blouin whose telephone number is (703) 305-5629. The examiner can normally be reached M-F, 6:00 am – 3:30 pm.

If attempts to reach the examiner by telephone are unsuccessful the examiner's supervisor, William Korzuch can be reached at (703) 305-6137. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9314 for regular and After Final communications.

Any inquiry of general nature or relating to the status of application or proceeding should be directed to the receptionist whose telephone number is (703) 306-0377.



Mark Blouin
Patent Examiner
Art Unit 2653
May 2, 2003



WILLIAM KORZUCH
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